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ROSAT

FINAL TECHNICAL REPORT FOR NAG 5-4759

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Final Technical Report for NAG5-4759

Charles J. Hailey, Principal Investigator

The HRI observation of the CTB1 region requested in the original proposal was performed and data received. The primary target, the candidate neutron star, was detected at the predicted intensity. As proposed, both timing and spatial extent analysis has been performed on the extracted photons.

The preliminary timing analysis showed no evidence for the faint pulsations seen in the PSPC data. As the pulse fraction was rather small, this was not an unexpected result. We have, however, recently developed more sophisticated timing analysis capabilities and are in the process of reanalyzing the data to more accurately constrain the pulse fraction, if indeed any evidence for pulsation is found.

The search for spatial extent in the data was less straightforward due to residual aspect correction errors in the HRI data. At this point, however, it appears that there is not strong evidence for any spatial extent consistent with a synchrotron nebula. Reanalysis of the data, in preparation for the publication of the results, is underway.

We have supplemented the HRI observations with optical observations. Filter images, in BVR & I, have been obtained as well as spectra for candidate counterparts. As of this writing, the original analysis holds, i.e. the x-ray flux is not consistent with the L_x/L_{opt} ratios expected from the candidate stars within the 3 sigma positional error circles. HRI confirmation of the flux as well as the refinement of the position have allowed us to limit the candidate list and refine the original L_x/L_{opt} analysis.

The HRI observations, as well as the supporting optical observations are currently being prepared for publication with submission expected in the early part of next year.